Culvert Replacements

Within the project area seven stream crossing have been identified as full or partial barriers to fish passage. The Forest is currently working with our national office and Salt Lake County to develop a design for each of these crossings to provide for fish passage. The replacement of these structures should also improve downstream flood and debris passage.

In 2013 the Forest replaced two culverts in Church Fork to eliminate spring flooding problems through the Church Fork Picnic Area.

In the fall of 2014, with financial assistance from the Fish Passage Program of the Fish and Wildlife Service, the forest contracted out the replacement of the upper two culverts in Mill Creek. These replacements took place was the stream section was devoid of fish after the fall treatment. The general steps for culvert replacement include:

1. Develop and implement a traffic control program. In this case vehicle traffic was closed at the winter gate adjacent to Maple Grove Picnic area around the 22 of September 2014. All of the toilets above the gate were pumped dry and locked and the Big Water Yert was hauled in. A closure order around the construction sites were signed and the area was closed to public foot and bike traffic. Closure signs at the ridge lines above the project area were also installed warning people of the area closure around the construction sites.
2. Equipment was then brought in for the construction work.
3. The stream around the construction site to minimize sedimentation from moving down the stream channel which would impact aquatic insects and fish survival.



4. The road blacktop is cut and the site prepared for removal of the existing structure. The existing structure is then removed and the new alinement is dug and the site is prepared for the new structure. Survey equipment is used to be sure the layout is correct.

5.

The road is used as a temporary storage location for material excavated from the new trench minimizing impacts to riparian vegetation.

6. The new culvert sections are then brought from the manufacturing site to the installation site. Because of the weight of the individual sections only one section could be hauled up the canyon at a time. Once the section was moved into its permanent location the flat bed trail was disconnected from the truck and spun around to head back down the canyon for the next section. From the arrival of the truck on site to the truck headed back down the canyon was approximately one hour.

Culvert Placement

Fitting The Sections Together

Spinning The Haul Trailer

7. The culvert is then backfilled and a new natural stream bed is established in the culvert to improve fish passage.

8. Unneeded fill is then removed from the site and stockpiled offsite.
9. The pumps are then turned off and the water is diverted back through the culvert. The total installing took approximately one week.
10. The site is then left to sit over the winter which allows the road surface to settle and a new section of blacktop is laid over the new culvert.

Before photos looking at culvert 10140 looking upstream. Note the patch material on the road surface where the culvert was too short allowing the road surface to slough into the creek.

New structure with photos taken July 2015 of culvert 10140.

Culvert 10140

Culvert 10142

Culvert 10141

Culvert 10139

Difficulties: Bedrock was encountered on the second culvert. With the culvert sections already precast, the contractor hit bedrock just below the stream surface which required a contract modification and additional equipment to be brought in. This caused about a week delay in the project. In this case a second track hoe with a jackhammer was sufficient to drop the construction bed deep enough to install the precast culvert. Fish and Wildlife Service Funds were used to modify the contract to deal with the bedrock.